



Issued by:

Cereal Disease Laboratory

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For the latest cereal rust news from the field, subscribe to the cereal-rust-survey listserv list. To subscribe, please visit:
<http://www.ars.usda.gov/Main/docs.htm?docid=9970>

Or, send an email to: Mark.Hughes@ars.usda.gov

Reports from this list as well as all Cereal Rust Bulletins are maintained on the CDL website (<http://www.ars.usda.gov/mwa/cdl/>)

- Wheat stem rust has been found in nurseries in southern Texas.
- Wheat leaf rust has been reported from southern Texas to south central Oklahoma and Kansas.
- Wheat stripe rust appeared early in 2015 and was active in Oregon, Washington, Louisiana, Arkansas, Mississippi and Texas.
- Trace levels of oat stem rust were found in nurseries in southern Texas and southern Louisiana.
- Oat crown rust has been found in South Texas and southern Louisiana.
- Barley stem rust was found on barley in windbreaks in the Lower Rio Grand Valley of Texas.
- Barley leaf rust was found in the Texas windbreaks.
- *2014 Wheat leaf rust race survey results now available.*
- *Request for cereal rust observations and samples in 2015.*

For original, detailed reports from our cooperators and CDL staff, please visit the [Cereal Rust Situation](#) (CRS) reports page on the [CDL website](#) or click the [CRS](#) link found throughout the bulletin.

Generally, precipitation was limited across the U.S. this last week. Extreme drought conditions persist in parts of central and northern Texas as well central and western Oklahoma. Winter wheat conditions deteriorated in several Great Plains states this past week. Winterkill was severe in Nebraska, particularly in the southwest area of the state where severely impacted fields had 60-80% damage.

Wheat stem rust. Wheat stem rust at 1% severity was found on six lines, including Morocco and Line E the last week of February in nurseries at Weslaco in extreme southern Texas. By March 10, severities as high as 30% were observed on Morocco. The wheat was at Feekes 10.2 stage. Trace levels of wheat stem rust were found in nurseries at Uvalde in southern Texas by late March.

Wheat stem rust map. Please visit: <http://www.ars.usda.gov/Main/docs.htm?docid=9757>.

Wheat leaf rust.

Texas – Wheat leaf rust was spreading in plots at College Station in late February and had reached 100S on Baldwin and TAM 110 (*Lr37*). Leaf rust was easy to find, but at low severity at Bushland in the Texas High Plains and Chillicothe in the Texas Rolling Plains. In late March, wheat leaf rust was uniformly distributed in the lower canopy of spreader rows in nurseries at Castroville in south central Texas. The borders/spreader rows had reached 100S in the mid-canopy. Recent rains and warm temperatures were conducive for further spread.

Leaf rust was prevalent and reached 80% or more on Morocco and 30-40% on Line E in a nursery at Weslaco in extreme south Texas the second week of March. Very little leaf rust was found on other lines. At Mission, in extreme southern Texas, leaf rust was found on a few plants mixed in with barley used as a windbreak in watermelon production fields.



Oklahoma – Low levels of wheat leaf rust were observed on strips of Jagalene (*Lr24*) in a nursery at Stillwater in north central Oklahoma on February 10. By March 16 the cold weather in late February and early March had killed the lower leaves where the leaf rust was originally found and no wheat leaf rust was observed. Leaf rust was active in south and central Oklahoma in mid-March, however, stripe rust was more prevalent.

Kansas – On March 11, leaf rust was not found in plots near Manhattan in northeastern Kansas that had leaf rust last fall. Cold temperature had caused severe tip die-back. Trace amounts of leaf rust were found in adjacent fields that were planted much later and exhibited less winter injury. Trace levels of leaf rust were observed on lower leaves in Reno and Sumner counties in south central Kansas on March 13. The incidence was very low, taking several minutes to find pustules. Predicted dry conditions in the state will likely limit the spread of leaf rust.

Wheat leaf rust map. Please visit: <http://www.ars.usda.gov/Main/docs.htm?docid=9757>.

Wheat cultivar *Lr* gene postulation database. Please visit: [Leaf rust resistance gene postulation in current U.S. wheat cultivars](#)

2014 wheat leaf rust survey summary and results. Please visit: [Wheat leaf rust race survey results](#).

Wheat stripe rust.

Stripe rust appeared early this year (January and February) in Oregon, Louisiana, Arkansas, Mississippi and Texas. Oregon experienced a very mild winter while the Gulf States areas experienced a wet winter.

Oregon – Stripe rust was observed in a nursery at Corvallis in western Oregon on January 10. The nursery was planted much earlier (September 16) than commercial fields in the Willamette Valley. Stripe rust was found in the southern Willamette Valley January 7-12, about three weeks earlier than previously reported. The stripe rust was found in early planted fields (September through first 10 days of October), but not found in later planted fields (see [CRS](#)). By late February, stripe rust continued to develop on susceptible and moderately susceptible wheat cultivars in western Oregon.

Washington – No stripe rust was found in commercial fields on a survey through southeastern Washington on March 4. Wheat stem rust was, however, found in nurseries near Walla Walla (southeastern Washington) planted on October 6 (see [CRS](#)). The plants were at Feekes 4-5. As is typical, stripe rust was found in the nursery at Mt. Vernon in northwestern Washington. Susceptible checks were at 20-30% severity levels.

California – Stripe rust appeared in nurseries in both the Sacramento and San Joaquin Valleys over the last few weeks. The wheat cultivar Joaquin was most severely impacted and had 90% severity and 100% incidence in a nursery at Corcoran in Kings County in the southern San Joaquin Valley. Moderate to severe infections were found on advanced lines (common wheat, durum, triticale and barley) in Arizona Plant Breeder's nursery in Yolo County in the Sacramento Valley.

Louisiana – Stripe rust was observed on strips of a susceptible cultivar in a Winnsboro in northeastern nursery Louisiana on January 21 and the rust was very active at Winnsboro by late March. Stripe rust was widespread in Baton Rouge in southern Louisiana in late March, however, a week of temperatures in the 80s slowed development, but with the expected return to cooler temps additional development is likely.

Arkansas – Wheat stripe rust hot spots were easily found in eastern Arkansas in early February. Very cool weather minimized additional spread in February.



Texas – Stripe rust was observed on the lower leaves in fields in west central Texas at the end of February and the beginning of January. Fungicides were applied in mid-February, the wheat was fully tillered at the time. Some cultivars that had stripe rust include TAM 113, Coronado, Greer, Redhawk, Cedar and TAM 304. Stripe rust severities of 80% or higher were observed in some spots of Sisson plots at Weslaco in extreme southern Texas the second week of March while Panola exhibited chlorotic reaction, but with no sporulation. Stripe rust was not observed on other wheat entries in the nursery. Early stripe rust infections could be found in fields around Kingsville. Spring wheat was at tillering to late joint stages. In late March, stripe rust was not uniform in the nurseries at Castroville, but rows of Patton had reached 70s on the flag leaves. The wheat was at Feekes stages 9-10.5.

Oklahoma – Stripe was found in Stillwater in northern Oklahoma on March 21. Conditions were conducive for infection with light rains and cool days.

Please send wheat and barley stripe rust collections as soon as possible after collection to:

Dr. Xianming Chen
USDA-ARS
361 Johnson Hall
P.O. Box 646430
Washington State University
Pullman, WA 99164-6430
email: xianming@wsu.edu

Note: Stripe rust collections are vulnerable to heat and do not survive long at warm temperatures; therefore, if shipment of collections for race identification is delayed their viability will be greatly reduced. An overnight courier service is preferred for sending stripe rust collections.

Wheat stripe rust map. Please visit: <http://www.ars.usda.gov/Main/docs.htm?docid=9757>.

Oat stem rust. Trace amounts of oat stem rust were observed on the leaves in plots of Marvelous oat at Weslaco in extreme southern Texas the second week of March. At Uvalde, in South Texas, trace amounts of oat stem rust were found in winter oat plots in late March. One pustule of oat stem rust was found in nurseries at Baton Rouge in southern Louisiana on March 25.

Oat stem rust map. Please visit: <http://www.ars.usda.gov/Main/docs.htm?docid=9757>.

Oat crown rust. Oat crown rust, at 25% incidence with severities as high as 35%, was observed around the Kingsville area of South Texas on March 3. The second week of March crown rust had reached 20% on some leaves of Marvelous in plots at Weslaco in extreme southern Texas. *Avena strigosa* (sometimes referred to as black oat) and Rodney Pg16 were crown rust free in plots at Weslaco. By late March, crown rust was widespread in the nurseries at Baton Rouge with ~5% severity in susceptible spreader rows. New infections were beginning to show and conditions were favorable for further spread and development.

Oat crown rust map. Please visit: <http://www.ars.usda.gov/Main/docs.htm?docid=9757>.

Barley stem rust. A few stem rust pustules were observed on hooded barley, used in watermelon windbreaks, in the Lower Rio Grand Valley the second week of March. The barley ranged from jointing stage to heading.



Barley leaf rust. Barley leaf rust was observed in alleys and a few limited areas in the watermelon windbreaks in the Lower Rio Grand Valley the second week of March. The barley leaf rust was at early infection stage and not yet widespread.

Barley leaf rust map. *Please visit:* <http://www.ars.usda.gov/Main/docs.htm?docid=9757>.



Request for cereal rust observations and samples

Cereal Disease Laboratory, USDA-ARS, St. Paul, MN

(Please save this for future reference)

Cooperators' assistance is critical to our work

We depend on the assistance of our cooperators for cereal rust observations and samples (as well as other significant small grain disease observations). Without this assistance our job would be much more difficult. We sincerely thank all those who have assisted us in the past and hope the assistance continues this year and in future years.

Observations

If you have information on the cereal rust situation in your area that you would be willing to share with the group, please email your observations to:

CEREAL-RUST-SURVEY@LISTS.UMN.EDU *

Or, to: Mark Hughes (Mark.Hughes@ars.usda.gov)

*We would like to include your name and email address so others can contact you. **If, however, you prefer not having your name or email address appear with the information, please let us know when submitting your observations.***

Information of most importance

We welcome any information you can provide, but are particularly interested in:

- Location (state, county, city)
- Rust (leaf rust, stem rust, stripe rust, crown rust)
- Host (wheat, barley, oat, grasses, etc.)
- Cultivar or line name if known
- Grain class if known
- Severity and prevalence
- Growth stage: when the rust likely arrived, when infection was first noted and current growth stage
- Where rust is found on the plants, e.g., lower leaves, flag leaf, etc.

Guidelines for making cereal rust uredinial collections**

Reports on the distribution of races of cereal rust fungi are an important part of our annual cereal rust surveys. We routinely collect and test isolates of stem rust (wheat, oat, and barley), wheat leaf rust, oat crown rust and barley leaf rust. We are most interested in small grain collections (wheat, barley, oat and rye), but are also interested in stem rust, leaf rust, and stripe rust collections from grasses, e.g.:

Jointed goatgrass (*Aegilops cylindrica*)

Ryegrasses (*Elymus* spp.)

Wheatgrasses (*Elytrigia* spp.)

Wild barleys (*Hordeum* spp.)

Wild oat (*Avena fatua*)

Common grasses, e.g., *Agropyron*, *Agrostis*, *Festuca*, *Leymus*, *Lolium*, *Phleum*, and *Psathyrostachys* spp.

*Images and descriptions of the above grass species can be found on the USDA Natural Resources Conservation Service's **PLANTS Database** website*



Cereal Disease Laboratory (www.ars.usda.gov/mwa/cdl)

1. Rust pustules should be fresh and fully developed, except when this may not be possible, i.e., the first uredinial collections found early in the season.
2. When rusted small grain or grass plants are encountered, please cut 5 to 10 sections of plant stem (if possible, avoid including plant nodes as they do not readily air dry) or leaf, 4 inches long with large and small pustules and place in a regular paper mail envelope (**Please Do Not use plastic or waterproof envelopes**). Do not staple or tape the envelope, instead fold the flap shut.
3. Important information should be recorded for each collection, e.g., date, county, state, cultivar or line, crop stage, whether collection is from a nursery or commercial field, etc. Please use our data collection form ([standard pdf](#) or [fillable pdf](#)) if possible. If the grass genus or species is unknown to the collector, please send a head in a separate bag or envelope if possible, indicating which collection it is associated with to aid in identification.
4. Please avoid exposing samples to direct sunlight or unusual heat of any kind, e.g. car dashboard, outside mailboxes, etc. Samples should be kept at room temperature for 24 hours to allow the plant material to dry. Afterwards the samples should be placed in a cooler or refrigerator before they are mailed. Please do not keep samples in a freezer. The samples should be sent to us as soon as possible after the samples have dried.
5. Please promptly mail the envelope(s) with the appropriate collection form inside each envelope to:

Cereal Disease Laboratory, USDA-ARS
1551 Lindig Street
University of Minnesota
St. Paul, Minnesota 55108

**** Stripe rust collections should be sent to:**

Dr. Xianming Chen
USDA-ARS
361 Johnson Hall
Washington State University
Pullman, WA 99164-6430

Thank you in advance for your assistance!

Current cereal rust situation

For the latest cereal rust situation reports, please subscribe to the cereal rust survey listserv list*. Instructions can be found at:

<http://www.lsoft.com/scripts/wl.exe?SL1=CEREAL-RUST-SURVEY&H=LISTS.UMN.EDU>

Or, if you prefer, simply send a subscription request to Mark Hughes (Mark.Hughes@ars.usda.gov).

All messages sent to the list are archived on the CDL website:

<http://www.ars.usda.gov/Main/docs.htm?docid=9757>



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Identifying rust diseases of wheat and barley

A [guide](#) developed by the multi-state extension and research committees for small grain diseases, NCERA-184 & WERA-97, is available at:

http://www.ars.usda.gov/SP2UserFiles/ad_hoc/36400500Publications/Rust_Diseases_National.pdf

*The sole purpose of the Cereal Rust Survey listserv list is to provide a format for cereal researchers and extension personnel to share observations of cereal rusts and other cereal diseases. We make no warranty about any information shared on this listserv or its utility or applicability. Mention of any product, brand, or trademark does not imply endorsement or recommendation of that product, brand, or trademark by USDA-ARS, or any of the participants on this listserv. By enrolling on this listserv list, participants understand and agree to abide by these conditions.



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